

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	330	715/760.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:32
L2	316	713/151.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:33
L3	206	726/14.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:33
L4	28	726/14.ccls. and @ay <="1997"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:33
L5	45	2 and @ay <="1997"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:33
L6	35	1 and @ay <="1997"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:33
S1	6786	707/200-206.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/07 16:12
S2	584	707/206.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/07 16:17
S3	134	inode and directory and database and partition	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/07 16:18

EAST Search History

S4	1	inode and directory and database and partition and S2	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/07 17:30
S5	41	inode and directory and database and partition and S1	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/07 17:36
S6	11	inode and directory and database and partition and S1 and @ay <="2000"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/07 18:44
S7	24365	"715"/\$.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:32
S8	0	eri-young.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/08 16:40
S9	0	eric-young.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/08 16:41
S10	5	"eric young"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/08 16:42
S11	240231	"young"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/08 16:42
S12	0	ssleay and "inetd.conf"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/08 16:42
S13	1	ssleay and "inetd"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/08 16:57

EAST Search History

S14	79812	unix and proxy same port forwarding	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/08 16:57
S15	7	unix and proxy same port near5 forwarding	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/08 16:58
S16	13	unix and proxy same port adj "80" same forward\$3	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/08 16:59
S17	19	unix and proxy same port adj "80" same redirect\$3	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/08 17:00
S18	27	proxy same port adj "80" same redirect\$3	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/08 17:01
S19	60	proxy same port adj "80" same (redirect\$3 forward\$3 remap\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/08 17:01
S20	3	proxy same port adj "80" same (redirect\$3 forward\$3 remap\$4) and @ay <="1997"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/08 17:01

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	38327	port near3 (forward\$3 sourc\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L2	3821	(port near3 (forward\$3 sourc\$3)) same ((first 1st primary default) near3 port) same ((second\$3 2nd) near3 port)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L3	2816	(port near3 (forward\$3 sourc\$3)) with ((first 1st primary default) near3 port) with ((second\$3 2nd) near3 port)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L4	73	(port near3 (forward\$3 sourc\$3)) with ((first 1st primary default) near3 port) with ((second\$3 2nd) near3 port) and (ssl https)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L5	63	(port near3 (forward\$3 sourc\$3)) with ((first 1st primary default) near3 port) with ((second\$3 2nd) near3 port) and (ssl https) and network	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L6	63	(port near3 (forward\$3 sourc\$3)) with ((first 1st primary default) near3 port) with ((second\$3 2nd) near3 port) and (ssl https) and network\$3	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L7	666	(port near3 (forward\$3 sourc\$3)) with ((first 1st primary default) near3 port) with ((second\$3 2nd) near3 port) and network\$3	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L8	552	(port near3 (forward\$3 sourc\$3)) with ((first 1st primary default) near2 port) with ((second\$3 2nd) near2 port) and network\$3	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L9	16	(port near3 (forward\$3 sourc\$3)) with ((first 1st primary default) near2 port) with ((second\$3 2nd) near2 port) same (prox\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35

EAST Search History

L10	17	(port near3 (forward\$3 sourc\$3 redirect\$3)) with ((first 1st primary default) near2 port) with ((second\$3 2nd) near2 port) same (prox\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L11	24	(port near3 (forward\$3 sourc\$3 redirect\$3)) with (prox\$3) and ((first 1st primary default) near2 port) same ((second\$3 2nd) near2 port)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L12	36	(port near3 (forward\$3 sourc\$3 redirect\$3)) with (prox\$3) and ((first 1st primary default) near2 port) and ((second\$3 2nd) near2 port)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L13	12	L12 not L11	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L14	160	(port near3 (forward\$3 sourc\$3 redirect\$3)) with (prox\$3) and (software code program)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L15	160	(port near3 (forward\$3 sourc\$3 redirect\$3)) with (prox\$3) and (software code program) and (port forward\$3 sourc\$3 redirect\$3 prox\$3 first 1st primary default port second\$3 2nd port)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L16	0	713/201.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L17	258	"5623601"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L18	69	"5623601" and ssl	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35

EAST Search History

L19	65	"5623601" and ssl and https	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L20	16	08/322078	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L21	2242	http with (encrypt\$3 encapsulat\$3 encipher\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L22	1326	http near\$ (encrypt\$3 encapsulat\$3 encipher\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L23	15969	(http same (port near\$3 (exchang\$5 or redirect\$5 or swap\$5 or chang\$5 or switch\$5)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L24	17727	(http same (port near\$3 (exchang\$5 or redirect\$5 or swap\$5 or chang\$5 or switch\$5 forward\$3)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L25	306	@ay < "1997" and (http same (port near\$3 (exchang\$5 or redirect\$5 or swap\$5 or chang\$5 or switch\$5 or forward\$3)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L26	137	@ay < "1997" and (http same (port near\$3 (redirect\$3)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L27	0	@ay < "1997" and (http same (port near\$3 (redirect\$3)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L28	1	@ay < "1997" and (http same (port with (redirect\$3)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35

EAST Search History

L29	98	(http same (port with (redirect\$3)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L30	98	(http port redirect\$3 "80" "443" https forward\$3 swap\$4) and L29	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L31	8	(http same (url with (redirect\$3 with port)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L32	548	(http same (url with (redirect\$3)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L33	20	(http same (url with (redirect\$3))) same port	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L34	35	(http and (url with (redirect\$3))) same port	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L35	501	(http and (url with (redirect\$3))) and port	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L36	78	(http and (url with (redirect\$3))) and (port with (forward\$3 swap\$4 redirect\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L37	14714464	@ay < "1997" (http and (url with (redirect\$3))) and (port with (forward\$3 swap\$4 redirect\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L38	1	@ay < "1997" and (http and (url with (redirect\$3))) and (port with (forward\$3 swap\$4 redirect\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35

EAST Search History

L39	5	@ay < "1997" and (http and (url with (\$2direct\$3))) and (port with (forward\$3 swap\$4 redirect\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L40	7	https near3 :80	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L41	9	https near5 :80	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L42	9	"https" near5 :80	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L43	10	"https" near7 :80	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L44	0	secure with http near7 :80	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L45	0	secure with http with :80	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L46	67	secure with http with "80"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L47	21	ssh same "port 80"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L48	2	ssh with (forward\$3 redirect\$3) with "port 80"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35

EAST Search History

L49	4	ssl with (forward\$3 redirect\$3) with "port 80"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L50	655	(protocol near9 (forward\$3 redirect\$3)) same http same (ssl "https" ssh)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
L51	16	(protocol near9 (forward\$3 redirect\$3)) same http same (ssl "https" ssh) and @ay <"1997"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/15 18:35
S1	34165	port near3 (forward\$3 sourc\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 10:19
S2	3451	(port near3 (forward\$3 sourc\$3)) same ((first 1st primary default) near3 port) same ((second\$3 2nd) near3 port)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 10:20
S3	2571	(port near3 (forward\$3 sourc\$3)) with ((first 1st primary default) near3 port) with ((second\$3 2nd) near3 port)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 10:20
S4	56	(port near3 (forward\$3 sourc\$3)) with ((first 1st primary default) near3 port) with ((second\$3 2nd) near3 port) and (ssl https)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 10:21
S5	47	(port near3 (forward\$3 sourc\$3)) with ((first 1st primary default) near3 port) with ((second\$3 2nd) near3 port) and (ssl https) and network	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 10:21
S6	47	(port near3 (forward\$3 sourc\$3)) with ((first 1st primary default) near3 port) with ((second\$3 2nd) near3 port) and (ssl https) and network\$3	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 10:35
S7	561	(port near3 (forward\$3 sourc\$3)) with ((first 1st primary default) near3 port) with ((second\$3 2nd) near3 port) and network\$3	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 10:36

EAST Search History

S8	460	(port near3 (forward\$3 sourc\$3)) with ((first 1st primary default) near2 port) with ((second\$3 2nd) near2 port) and network\$3	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 13:43
S9	14	(port near3 (forward\$3 sourc\$3)) with ((first 1st primary default) near2 port) with ((second\$3 2nd) near2 port) same (prox\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 13:54
S10	15	(port near3 (forward\$3 sourc\$3 redirect\$3)) with ((first 1st primary default) near2 port) with ((second\$3 2nd) near2 port) same (prox\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 13:56
S11	18	(port near3 (forward\$3 sourc\$3 redirect\$3)) with (prox\$3) and ((first 1st primary default) near2 port) same ((second\$3 2nd) near2 port)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 13:58
S12	26	(port near3 (forward\$3 sourc\$3 redirect\$3)) with (prox\$3) and ((first 1st primary default) near2 port) and ((second\$3 2nd) near2 port)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 14:05
S13	8	S12 not S11	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 13:58
S14	120	(port near3 (forward\$3 sourc\$3 redirect\$3)) with (prox\$3) and (software code program)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 14:05
S15	120	(port near3 (forward\$3 sourc\$3 redirect\$3)) with (prox\$3) and (software code program) and (port forward\$3 sourc\$3 redirect\$3 prox\$3 first 1st primary default port second\$3 2nd port)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 14:18
S16	3540	713/201.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 14:41

EAST Search History

S17	237	"5623601"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 15:08
S18	65	"5623601" and ssl	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 15:08
S19	61	"5623601" and ssl and https	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 15:16
S20	16	08/322078	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/26 15:19
S21	1669	http with (encrypt\$3 encapsulat\$3 encipher\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 15:07
S22	984	http near\$ (encrypt\$3 encapsulat\$3 encipher\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 16:07
S23	12290	(http same (port near\$3 (exchang\$5 or redirect\$5 or swap\$5 or chang\$5 or switch\$5)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 16:07
S24	13641	(http same (port near\$3 (exchang\$5 or redirect\$5 or swap\$5 or chang\$5 or switch\$5 forward\$3)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 16:08
S25	302	@ay < "1997" and (http same (port near\$3 (exchang\$5 or redirect\$5 or swap\$5 or chang\$5 or switch\$5 or forward\$3)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 16:11
S26	137	@ay < "1997" and (http same (port near\$3 (redirect\$3)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 16:13

EAST Search History

S27	0	@ay < "1997" and (http same (port near3 (redirect\$3)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 16:13
S28	1	@ay < "1997" and (http same (port with (redirect\$3)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 16:16
S29	80	(http same (port with (redirect\$3)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 16:37
S30	80	(http port redirect\$3 "80" "443" https forward\$3 swap\$4) and S29	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 16:17
S31	8	(http same (url with (redirect\$3 with port)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 16:38
S32	440	(http same (url with (redirect\$3)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 16:38
S33	18	(http same (url with (redirect\$3))) same port	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 16:39
S34	31	(http and (url with (redirect\$3))) same port	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 16:40
S36	396	(http and (url with (redirect\$3))) and port	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 16:40
S37	66	(http and (url with (redirect\$3))) and (port with (forward\$3 swap\$4 redirect\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 16:47

EAST Search History

S38	14707281	@ay < "1997" (http and (url with (redirect\$3))) and (port with (forward\$3 swap\$4 redirect\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 16:48
S39	1	@ay < "1997" and (http and (url with (redirect\$3))) and (port with (forward\$3 swap\$4 redirect\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 16:48
S40	5	@ay < "1997" and (http and (url with (\$2direct\$3))) and (port with (forward\$3 swap\$4 redirect\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 18:32
S41	5	https near3 :80	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 18:32
S42	7	https near5 :80	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 18:33
S43	7	"https" near5 :80	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 18:33
S44	7	"https" near7 :80	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 18:34
S45	0	secure with http near7 :80	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 18:34
S46	0	secure with http with :80	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 18:34
S47	51	secure with http with "80"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2005/04/29 18:34

EAST Search History

S48	21	ssh same "port 80"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/09 17:06
S49	2	ssh with (forward\$3 redirect\$3) with "port 80"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/09 17:11
S50	4	ssl with (forward\$3 redirect\$3) with "port 80"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/09 17:11
S51	654	(protocol near9 (forward\$3 redirect\$3)) same http same (ssl "https" ssh)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/09 17:31
S52	16	(protocol near9 (forward\$3 redirect\$3)) same http same (ssl "https" ssh) and @ay <"1997"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/09 17:31

Chapter 5

Installing and Configuring Netscape Enterprise Server and LiveWire

CONTENTS

- Overview of the Enterprise 2.0 Server
- Enterprise 2.0 Features
 - General Features
 - Administration
 - Security and Performance
- Pre-Installation Requirements
 - Configuring Windows NT
 - Installing TCP/IP
 - Configuring Security
- Installing the Enterprise Server
 - Server Setup: Selecting Hostname
 - Administration Server Setup: Choosing Administration Access Username
 - Administration Server Setup: Choosing Administration Port Number
 - Administration Server Setup: Choosing Administration User
 - Web Server Setup: Choosing Document Root
- Configuring Enterprise Server
 - System Settings
 - Access Control
 - Encryption
 - Programs
 - Server Status
 - Configuration Styles
 - Content Management
 - Index Documents
 - Auto Catalog
- Installing and Configuring LiveWire
 - Installing LiveWire
 - Configuring Enterprise Server for LiveWire
 - Using LiveWire
- Virtual Hosts
 - Installing a Hardware Virtual Server
 - Installing a Software Virtual Server
- Netscape FastTrack Server
- Troubleshooting
 - Detecting Problems with Event Viewer
 - Monitoring with Performance Monitor
 - Online Help

In this chapter, you are introduced to the Netscape Enterprise Server and LiveWire, and given step-by-step instructions to install and configure these two applications. This chapter will go through the basic steps needed to prepare windows

NT for installation of the Enterprise Server, and then downloading, installing, and configuring the Enterprise Server and LiveWire.

The Netscape Enterprise 2.0 Web Server is a third-generation server from Netscape Communications, creators of the popular Netscape Navigator software. Due to the vast number of enhancements available on this server, it is impossible to detail the operations of each and every option. Instead, this chapter will outline basic installation, briefly describe each of the available options, and provide step-by-step instructions for configuring some of the more popular features.

LiveWire is an add-on to the Netscape Enterprise Server, comprised of three main components. The Site Manager and LiveWire compiler, the LiveWire server extension, and Netscape Navigator Gold. LiveWire serves two main purposes, to help manage a Web site, and to help create dynamic content. Even though this chapter is primarily geared toward installing the Enterprise Server and LiveWire on a computer running Windows NT, the downloading and configuration information presented can be used on most platforms (including UNIX) supported by the Server.

In this chapter, you will learn the following:

- How to obtain the Enterprise Server and LiveWire
- How to configure Windows NT to the install Enterprise Server
- How to install the Enterprise Server
- How to configure the Enterprise Server
- How to install and Configure LiveWire

Overview of the Enterprise 2.0 Server

Before considering installing the Netscape Enterprise Server, it is a good idea to check the supported configurations (see table 5.1) to see whether your current hardware and operating system are capable of running the Server.

Table 5.1 Supported Configurations

Vendor	Architecture	OS	Memory Requirements
UNIX			
Digital	Alpha	OSF/1.3.2C	32 MB
HP	PA	HP-UX 9.x, 10.01	32 MB
IBM	RS/6000	AIX 3.2.5, 4.1	32 MB
SGI	MIPS	IRIX 5.4, 6.2	32 MB
Sun	Sparc	SunOS 4.1.3, Solaris 2.4, 2.5	32 MB
Windows NT			
Digital	Alpha	NT 3.51, NT 4.0	32 MB
Intel	x486, Pentium	NT 3.51, NT 4.0	32 MB

NOTE

Netscape recommends 30 MB of free disk space for installation, as well as 30 MB free disk space for log files (for a server with approximately 300,000 accesses per day).

Enterprise 2.0 Features

The Netscape Enterprise 2.0 Server has all of the standard features available on most popular WWW server packages, as well as a few special enhancements that make it particularly well suited for Intranet use.

General Features

To make Web publishing easier and more convenient, the Enterprise Server can be used in conjunction with Navigator Gold, a WYSIWYG HTML editing and publishing tool. Using Enterprise's remote file manipulation feature, Navigator Gold allows users to update Web files from any remote location that is networked to the Server. The familiar Web browser interface of Navigator Gold saves the user from having to learn to use other tools such as FTP and HTML. A revision control system allows multiple users to simultaneously work on documents without risking the integrity of the files on the Server.

A fully integrated, full-text search engine allows such features as full-text and field searches, incremental indexing, and add-on support for document types such as Portable Document Format (PDF) without having to revert to third-party software. An integrated cataloging system automatically generates catalogs of files on a site based on the creating author, the creation date, or through user-defined classifications. This catalog provides users with a quick overview of all the files available on the Server.

Administration

Administration of the Server has been simplified, and the interface has been made clear and logical. The new Administration Server has several new features, including new log analysis tools that create summaries on Web site statistics such as total hits, total number of unique hosts, and total traffic transferred. The new analysis tool also supports enhanced features such as identifying which clients are accessing the most number of pages and downloading the most information.

Support for multiple domains has been vastly improved over previous versions of the Netscape Server, enabling administrators to easily host multiple sites on a single machine. LiveWire, a standard component of the server, is a visual site management tool that allows administrators to view and restructure entire sites in a graphical form. To improve remote monitoring capabilities, the Enterprise Server now supports SNMP 1 and 2, allowing administrators to monitor their servers remotely using standard SNMP capable tools.

Security and Performance

To address security concerns, Netscape has upgraded its security with enhancements such as Secure Sockets Layer (SSL) 3.0 support, advanced access control, and client-side certificates. These components help to secure not only commerce but all communications that travel through the Server.

Netscape's second incarnation of its commercial Web Server software, the Enterprise 2.0 Server, combines new caching technology, platform-specific optimization, and multiprocessor support to create one of the best performing servers available on the market today.

Pre-Installation Requirements

The installation process of the Enterprise Server comes in several steps. First, it is necessary to configure Windows NT with the proper software and network settings so that the server can be installed. Next you need to obtain all of the software that you need to get the Enterprise 2.0 Server operating on your NT machine. Finally, you can customize your system to your needs by accessing the Administration Server.

Configuring Windows NT

The first step in preparing for the installation process is to make sure that Windows NT is properly configured. The

following instructions assume that you already have Windows NT installed and running properly, and that you have already configured your network interface card.

NOTE

To install the Enterprise 2.0 Server, you must have the Windows NT 3.51 service pack #4 installed. You can find this service pack as well as other configuration tips for Windows NT Server at the NT server home page at <http://www.microsoft.com/NTServer/>. Users of Windows NT 4.0 do not need to install any of the service packs.

To successfully operate an Enterprise Server, you must have the TCP/IP protocol installed on NT, and you must have a permanent IP address assigned to your Server. You will need to know your IP address to properly install your Server and for other people to be able to reach your Server.

TIP

To help users access your system, it is helpful to register a domain name in DNS for your permanent IP address. By doing so, users can access your server using the domain name (such as ian.digiknow.com) rather than a complicated IP address (192.147.147.142 would be the IP address associated to ian.digiknow.com).

Installing TCP/IP

Before installing TCP/IP on Windows NT, you will need to know the following information:

- The IP address(es) to be assigned to your computer
- The Host name(s) corresponding to the preceding addresses
- The IP addresses of the DNS servers you will use
- The Domain name in which you will operate
 1. Open the Network Control Panel and click on the Add Software button.
 2. From the pull-down menu, highlight TCP/IP Protocol and Related Components and click on Continue.
 3. Select the components you wish to install and click on Continue (At the very least you will want to install "Connectivity Utilities" and "Simple TCP/IP Services"). You will be prompted for the location of the NT software distribution disk.

Figure 5.1 : *The Network Control Panel allows you to add TCP/IP services and to configure them for use with the Enterprise 2.0 Server.*

NOTE

If you want to use the Windows NT Performance Monitor to monitor TCP/IP statistics, you will have to install SNMP service. SNMP will also allow your computer to be administered remotely using remote management tools. If you choose to install SNMP, you will be prompted by the SNMP configuration dialog box. Unless you have particular needs for SNMP, you can simply select the OK button.

4. If you have installed RAS for dial-up access to the Internet (either via modem or ISDN), you will be prompted to configure RAS to support the TCP/IP. If you do, click OK.

NOTE

It is possible to use the Enterprise Server on a dial-up IP connection (either via modem or ISDN). For proper operation, you must have a static IP address

defined, however. If you are using a dial-up connection to install the server, make sure the connection is live and running before installing the Enterprise Server.

5. Once the computer finishes adding TCP/IP services, click OK on the Network Settings Configuration Box. A TCP/IP Configuration box will appear allowing you to configure your network adapter.
6. From the Adapter pull-down menu, select the Adapter you wish to configure.
7. Under IP address, enter the IP address for your host.
8. Under Subnet Mask, enter the subnet mask for your host.
9. Under Default Gateway, enter the default gateway for your network.
10. If you are using DNS servers (if you are on the Internet, then you are), click DNS to bring up the DNS configuration dialog box.
11. Under Host Name, enter the host name of your server.
12. Under Domain Name, enter the domain in which your host is registered.
13. In the DNS Search Order box, enter the name(s) of the DNS servers you will be using for host lookups. Click OK to get back to the main configuration menu.
14. Now that you have TCP/IP properly configured on your NT Server, the last step is to reboot the machine to put the changes into effect. Click OK in the TCP/IP Configuration box and when prompted, restart the computer.

Configuring Security

The downside to the benefits that networking computers provides is that it also brings up several security issues. To meet this concern, Windows NT has several layers of security available to it, including user-account security and file system security using the Windows NT File System (NTFS).

Every operation that takes place under NT can be identified by the user name used to start the particular operation. The User Manager application allows you to set which resources a particular user is authorized to use on the computer, as well as which files they are allowed to access. To limit the level of access that the Enterprise Server has to your computer, it is recommended that you create a nonprivileged user account for the Server to run under. This account should be restricted to access only what is necessary to start up and operate the Enterprise Server software.

NOTE

By default, the Server uses the LocalSystem account under NT and the nobody account under UNIX. Under both systems, however, it is still recommended that administrators create a separate account for running the Server.

Installing the Enterprise Server

There are two ways to obtain the Enterprise server. The first (and the quickest) is to download the server from Netscape's home site at <http://www.netscape.com>.

TIP

Netscape allows a 60-day evaluation trial of all of their software packages, including Servers and browsers. If you want to have support, you can also purchase the server directly online and get 90 days of free technical support.

After you find the Server Download page, use the pull-down menus to select the files you wish to download. (You will need to specify the product you wish to download, the Operating System you are running, and the file type to download: .zip, .exe, or .gzip.) While you are at the Netscape site, you might also want to pick up a copy of the Navigator Gold software, which you will need to configure your Server if you do not have a Web browser installed yet. (It also allows for remote updates of Web files stored on the server.)

If you are not one for long downloads, for a negligible shipping and handling charge you can order an evaluation copy of the server on CD-ROM from Netscape's Web site at <http://www.netscape.com>. This CD will come with the Enterprise Server as well as the Navigator Gold Software.

TIP

You might want to install the Navigator Gold software before running the setup for the Server so that you will be able to jump right into the Administration Server after you are finished with the Enterprise Installation.

From the command prompt or from File Manager, run the executable file you have just downloaded (if you have the file on CD, run the setup.exe file).

TIP

Make sure that you shut down any other applications that are running before installing this software. If you are already running a WWW server, disable it in the Services Control Panel.

The setup program will first prompt you with the destination directory in which to install the Enterprise Server. If the directory you designate does not exist, don't worry; the setup program will create it for you. (Keep in mind, though, that you will need at least 30 MB of free space for the installation.)

NOTE

During setup, the server will come up with several queries. It is usually safe to use the default entries because you can change the values later using the Administration Server.

If you already have a Enterprise 1.1x server installed, the setup program will question whether you want to upgrade the server or if you want to install a new server. (You can run both concurrently, just not on the same port.) Either option will not write over your current 1.1x installation, however, and you can always reactivate it from the Services Control Panel.

Server Setup: Selecting Hostname

The Enterprise Server will automatically obtain the settings for your hostname as you entered them in your TCP/IP Configuration menu when you installed TCP/IP. If your server does not have a proper DNS entry set up, you should enter the IP address under which the server is running; otherwise, you will not be able to access your server properly.

Administration Server Setup: Choosing Administration Access Username

The administration access username is the name and password you will use to connect to and administer your Enterprise Server. Because the Enterprise Administration Server can be reached via the Netscape Navigator browser from any site on the Internet, it is crucial to set this feature for security purposes.

Figure 5.2 : *If a host name does not automatically come up, it means that you have not yet properly configured TCP/IP. Without a proper hostname, you will not be able to access your server once it is installed.*

Administration Server Setup: Choosing Administration Port Number

The Administration port is the port number on which you wish to operate your Administration Server (for example: <http://www.myserver.com:8888>). The installation process will randomly select a default port from the available ports

on the system. You will need to remember this port so you can later be able to access your Administration Server and make changes in your Enterprise Server configuration.

CAUTION

Netscape randomly chooses a port for the Administration Server for security purposes. Because this is the gateway into your Server configuration, it would be unwise to run it on a port that could be easily identified by others (even though it does prompt you for a password).

Administration Server Setup: Choosing Administration User

This name is the name of the user under which the Administration Server (as well as the Enterprise Server) will be run. At this time, you can leave this option as is because you will be able to make changes later within the Administrative Server.

Figure 5.3 : *By default, the administration server runs as LocalSystem. For security purposes, you might wish to change the name under which the Administrative Server runs.*

Web Server Setup: Choosing Document Root

The document root is the highest level directory visible to the Enterprise Server. You have to specify the full path to the location where your Web documents will reside. If the directory does not exist, it will be created for you.

CAUTION

This setting is vital because a large portion of Web security is based on the premise that the server cannot access files outside of this directory tree. Make sure that the server root directory tree does not contain any files that should not be accessible by the guests to the system.

Click finish to complete the installation and to start up your Server. If you have already installed the Navigator Gold browser, it will start itself up and display the new default home page on the Enterprise Server.

TIP

If at this time, the Server does not start up, you can use the Event Viewer in the Administrative Tools folder of Windows NT to see what caused the Server to fail.

Figure 5.4 : *If the installation is complete, and TCP/IP is configured properly on your system, the Enterprise Server Home Page should appear within Navigator Gold.*

Configuring Enterprise Server

To start configuring your new Enterprise Server, open your Web browser to the following URL:

`http://www.yourmachine.com:<admin port>`

TIP

Forgot what the administration port is? (You were warned to remember it.) No problem. You can go to the `admserv\directory` in your installation directory and look at the contents of the `ns-admin.conf` file with a text editor. This file contains

information on which port is running the Administration Server.

When you first connect to the Administration Server, you will be prompted for the login name and the password for your Administration Server. After you enter these, you will be welcomed by the Enterprise 2.0 configuration page.

To view and/or change the configuration of your server, click the server name. Doing so will bring up two menu bars in the Server Configuration page. The bar across the top has the main headings for configuration. The tool bar in the left frame shows the individual settings available under each main heading.

Figure 5.5 : *When you are entering the Administration Server you will be prompted for the user name and password which you entered during installation.*

Figure 5.6 : *Once you successfully enter the Administrative user name and password, you will see the Enterprise 2.0 Configuration Page. From here you will be able to administer all the servers installed on your system.*

There are too many options available on the Server Configuration page to outline them all in this chapter. Instead, you will be provided with a general overview of what each "section" of configuration options does, and how it can be utilized in an Intranet setting.

System Settings

The system's settings are the critical configuration options that determine how your Server operates. Settings include turning your server on and off, setting default values for server configurations (see table 5.2). At any time, you can use the restore configuration to restore previous settings of your server. (A great feature when you first start experimenting with the configuration files and all of a sudden, everything stops working.) By default, the Server will store the last 10 changes. To increase this number, click Configure Backups and enter the number of backups to store in the Number of backups field.

Figure 5.7 : *Once you select a Server from the Configuration screen, you will be given a variety of options for modifying settings on a particular Server. View Server Settings.*

This option provides a quick overview of the following Server variables:

Setting	Default Value	What It Does
Server Root		This is the directory in which your server files will be installed.
Hostname	Name of your computer	This is the name by which your server can be reached by others.
Port	80	This is the default HTTP Port under which your server can be accessed.
Error Log	ROOT\logs\errors	This is the file that stores the errors that the Enterprise Server detects.
DNS	off	This determines whether or not the server will execute a domain name lookup on hosts accessing the server.
Security	off	This determines whether your server is capable of secure transactions.
Additional ns-icons Documents mc-icons Directory		These are directory trees outside of the document root that can be accessed by the server.
		This is the main document tree that is

Primary Document Directory		accessible to the server and houses HTML files.
Index Filenames	index.html home.html	These are the files the server will look for if user does not specify a file in a directory.
Default MIME type	text/plain	This defines the default method that files are sent by the server if the server can't determine the proper type for the document.
Directory indexing	fancy	This option sets how the server responds if it cannot find one of the default file types in a directory.
Access log	ROOT/logs/access	This is the location where the Server stores a record of the hosts accessing files on the Server.

NOTE

Making changes in fields is a two-step process. The first step is to enter the changes and click OK. Next, you will be given the option to Undo the changes you have just made or to Save and Apply the changes. Clicking Save and Apply will make the changes and will restart your server to put the changes into effect.

Performance Tuning

This option allows you to configure the DNS settings for the Server. Turning DNS on will cause the Enterprise Server to look up the domain name of every computer that accesses files on the site. While this does improve security and tracking capabilities, it also causes a heavy load penalty on high-traffic systems. To help alleviate some of this load, the Server has a new feature that allows you to cache DNS entries. After performing an initial lookup, the Server then stores the results so that subsequent accesses by the same host do not have to be looked up.

You can specify the size of the cache as well as the amount of time before an entry is expired. By default, the Server will cache 1024 entries and expire them after 1200 seconds (20 minutes). You can specify between 32 to 32768 entries, and set an expiration time between 1 second and 1 year (specified in seconds).

CAUTION

While disabling DNS can lead to performance gains on busy systems, it disables hostname restrictions, and hostnames will not appear in the log files. Log files will contain IP addresses instead, and host-based access restrictions have to be based on IP numbers rather than domain names.

Network Settings

This option allows you to set the name of the user under which you wish to run the Enterprise Server. To change the user name, you will need to enter the new name under which you wish to run the Server, as well as the password set for this user. Without the proper password, your Server will be unable to restart properly. If you ever change the hostname of your server, or if you set up an alias for the server, you would register this change in the Server Name field. The Server Port field sets the port that the server listens to for incoming requests. By default, the HTTP port is 80, and the standard HTTPS port is 443. Technically, the port number can be any port from 1 to 65535. Bind To Address: shows you the current IP address that the server is responding to.

CAUTION

Changing to a nonstandard port means that users will be required to add the port number to the URL they use to access your site. For example, if you use port 8080 for your server, your URL is `http://www.yourhost.com:8080`.

Error Responses

This option allows you to customize the message that the Server displays to a client when it encounters an error. The new error message can be either a file on the Server or a CGI script. You can set customized error messages for the following:

- Unauthorized Access
- Forbidden Access
- File Not Found
- Server Error

NOTE

For several settings, Error Responses being one of them, the Enterprise server allows you to select which files are affected by the modifications that you make.

Choose Entire Server applies your changes to every document that the server maintains.

Browse files allows you to specify files or directories to which you want to apply or deny the changes.

Choose Wildcard Patterns lets you apply your changes to files or directories you specify with wildcard patterns. This is an easy way to specify a large number of files in separate directories (such as *.html) or files in specific subdirectories (such as /image/.*).

Dynamic Configuration Files

Even though Web Server Content is often maintained by several people, for security purposes it is ill-advised to give every user access to the Administration Server. At the same time, a Webmaster could easily get inundated with requests if he has to make every small configuration change on a Server for all of the users. The Dynamic Configuration Files option allows a Webmaster to give users access to a subset of configuration options, so that they can control only those elements which they need to.

Individual users can use a configuration file called `.nsconfig` in their personal directories to set a number of parameters, including custom error messages, defining file types or encoding, as well as activating access control.

Access Control

Access Control serves two major purposes: managing user databases, and controlling access to directories and files on the Server. Information on individual users or groups is stored in the Servers' built-in user databases. This information can be used in a variety of ways, the most important of which is user authentication.

Since Access Control allows you to set both read and write permissions on specific directories and files, it can be used in two separate ways. The first is to restrict individuals not found in the database from accessing information on the site. (Alternatively you can also deny access to particular hosts or domains.) Since Access Control also sets write access, it can also be used to select which users are able to use Navigator Gold to remotely create or update files on the server.

Encryption

The basic concept that allows the Internet to exist, the free passing of information from one computer to another over public networks, is also its key drawback. Since information being sent from one host to another is passing over public networks, it is possible that the information could be intercepted by others. What is worse is that due to the basic fundamentals of Internet Networking, it will always be possible for users to intercept data in transit.

Does this mean that you are exposing yourself to all sorts of risks? Thankfully, no. Consider most network communications to be as safe as voice communications over the phone or sending a letter via the mail. If, however, you do have information that is sensitive to prying eyes, encryption is the solution. *Encryption*, similar to encryption on your PC, disguises information before it is sent over the Internet, making it meaningless if someone intercepts it.

To address the security issue, Netscape products use the Secure Sockets Layer (SSL). SSL guarantees that information sent over a network can not be deciphered even if it is intercepted. It also ensures the integrity of information, not allowing users to intercept, change, and resend pieces of information. Finally, it can also be used to authenticate that a piece of information was actually created by the party claiming to have created it.

Using SSL

The basic operation of SSL is simple. The Enterprise Server has a "privacy key" attached to it. One part of this key is public, the other is private. When a browser wants to send encrypted information to a server, it reads in the public part of the Server's key. It then encrypts the message with the public side of the key and sends the encrypted message to the Server. Since only the private side of this particular key can decrypt the message, the Server is the only place where the message can be decrypted. Setting up SSL on the Enterprise Server takes several steps and involves a few different parties.

1. First, generate a Key using the "Generate Key" option. This part is the public key and will be used to create your private key.

CAUTION
If you forget your password, you will have to generate a new key-pair file and obtain another certificate (leading to additional costs). This will lead to your secure server being down until you receive the new certificate, and you will be unable to read already encrypted messages.

2. Next, request a Certificate from a Certification Authority (CA) by filling in the request form and completing the appropriate paperwork. (There is a setup fee and an ongoing fee for Server Certificates. Rates vary among Certification Authorities.)
Obtaining a certificate can take anywhere from two days to two months so plan ahead!
3. Once the Certificate comes back from the CA, you can install it on the server and activate security. Since it is possible to have multiple certificates, and since certificates run out every year, the certificate management option becomes important to ensure that all the right certificates are installed and activated.

Programs

The Enterprise Server is capable of much more than just serving up HTML, text, and graphics files. It is possible to run programs either on the client or on the Server that allow for any type of interaction you can imagine. You might allow users to use a search program on your server to find information that they need; a user might use a custom group-scheduling program to schedule a meeting; or a user might be logging her timesheets through a Java application.

The Enterprise Server currently supports three types of programs: CGI, Java, and JavaScript. CGI (Common Gateway Interface) programs can be written in any number of languages such as Perl, C, and C++. The common feature between

CGI programs is that they have a standard method in which they accept and return information. Java is a full-featured programming language that was created by Sun Microsystems for use on the Internet. JavaScript is a simpler scripting language based on Java, especially useful for creating simpler Web applications.

CGI

CGI scripts can be run on the Server in one of two ways. The first is to set the server up with a cgi file type (with a .exe or .cgi extension), so that CGI scripts can be run from anywhere on the server. The other option is to specify on directory as the cgi directory and only allow files within that particular directory tree to be executed. To set up a cgi directory:

1. Under URL Prefix, enter the trailing part of the URL that indicates you are accessing a CGI script (this is usually *cgi-bin*).
2. Under CGI Directory, enter the full path to your CGI directory (such as c:\Server\cgi-bin).

CAUTION

You can use both the CGI Directory and the CGI extension settings concurrently. For security purposes and due to the nature of CGI scripts, however, it is recommended that you keep all of the CGI scripts in one directory and that you not let inexperienced users install their own CGI scripts.

Java and Javascript

This option allows you to activate the Server's Java interpreter and to specify the Java applet directory. Similar to the CGI directory, this allows you to specify a directory on the server where all Java applets will be stored.

NOTE

No, this feature does not turn your computer into a coffee grinder. Java is a new programming language based on C++ that was designed to run as an interpreted language. Rather than have users download precompiled applications, by using Java a client can download a section of source code, interpret it, and run it on the client machine. Java applets can be used to generate on-the-fly graphic reports, query databases, conduct interactive training and provide continuous updating information.

Server Status

The most important aspects of running a server are to be able to identify which files are being accessed and how many people are accessing those files. The Access Log stores information on traffic to the server that can later be analyzed using built-in features. The Enterprise Server also allows you to monitor the Servers' usage so that you can keep it operating at its highest efficiency.

View Error Logs

Viewing the Error log allows you to keep track of any errors that the Enterprise Server encounters. If CGI scripts are failing, the error log will often tell you at which point a script might be failing. The error log will also point out when files are requested that do not exist. Often this is due to links becoming outdated or being misspelled. Correcting errors such as these will help avoid aggravating users with a "File Not Found" error message.

Monitor Current Activity

This option displays the current output of the server as well as the number of active processes the server is handling. If you are running a high-traffic server, this monitor will help determine where bottlenecks in the system might lie, and what can be done to enhance performance. (It could show that your system needs more memory to run more processes, or that the system is running faster than the Ethernet card can handle.)

Log Preferences

This option allows you to customize the location of your log files as well as the format to use. By default, the Enterprise Server uses the common log file format. You can also set whether the server will register hosts based on their domain name or IP address (if you have DNS turned off, it will always register them under their IP address). Additional logging features include the following:

- **Referer Headers:** This will log the last page that a user visited before coming to your Web site. This will show what part of your site they were visiting that led them to another area. (Shows cause and effect.)
- **User-Agent Headers:** This will log the type of browser that users are using to access your server. When making decisions on what enhancements (advanced HTML, Java, plugins, ActiveX) to use, knowing what the browser base is will help to make decisions that will benefit the largest numbers of users.
- **Query string of the URI:** This will log the entries after the question mark in a URI. Typically, this is the query string used in searches, allowing you to see what terms people used to find your information.

Generate Log

Rather than having to decipher a list of thousands of individual entries of visitors to a site, this option creates a summary of the log file entries that actually makes sense. Summary results can be displayed on-screen or saved to a file for future reference and comparison.

This option allows you to create a summary of your log file entries that actually makes sense (rather than a list of thousands of entries). By default, the summary results will be displayed to the screen but can be configured to save to a file (in HTML or text format).

TIP

Log files are often overlooked as not being vital. The log files, however, are a direct evaluation of your Web server, showing what areas are popular and what areas are not. They also give vital statistics on the number of hosts connecting to the server, as well as the amount of traffic that different areas of the server receives.

After generating a summary report of your Access Log, you might wonder what the numbers mean. Here is a summary of some of the important figures:

- **Total hits:** This count tells you how many pieces of information were downloaded from your Server. A single page accessed by a client containing 20 small graphics would be registered as 21 hits. Because of the way the counter works, this number has little value, other than it sounds nice being able to claim that your server gets 100,000 hits a day.
- **Total unique client hosts:** This count gives the closest estimate of the number of individuals that are accessing servers. The true meaning of this number is a count of the number of individual IP addresses that are accessing your system. However, it is possible that more than one person might be using the same IP address, so the number of total users lies somewhere above the number of unique hosts.
- **Total kilobytes transferred:** This count shows how much outgoing traffic is leaving your server. This might be a vital number if you are paying for bandwidth on a usage basis.
- **Top X periods:** This shows the times of the day that your server is the busiest.
- **Most commonly accessed URLs:** This shows the individual directories and files that are accessed most often.

Configuration Styles

Configuration styles are a quick and simple way to apply a set of configuration options to specific files or directories on your Server. You could for example set up a configuration style that configures how to handle access logging, how to handle errors, and where to look for cgi scripts. The style can then be applied to files or entire directories, saving the time of having to individually set options for files and directories.

Content Management

Because it is likely that your computer will be used for purposes other than as a Web Server, you probably want to be able to limit the areas that the Web Server can access. The Enterprise Server allows you to configure which areas of your server are accessible to the public, as well as which files are sent by default to a client.

The Primary Document Directory is the highest level which is readable by the web Server. Optionally, however, you can set Additional Document Directories which map to other directories outside of the Server document tree. You could, for example, have the directory /images/ point to d:\images, even though the server root is c:\Server\docs. This option is especially helpful if you are running short on drive space and want to move high disk volume directory trees to another drive or partition.

Remote File Manipulation

One of the most convenient features of the Netscape Enterprise Server is that it allows users to update files remotely via the Navigator Gold software. Using the familiar Navigator interface, combined with a simple WYSIWYG HTML editor, updating files on the Server has become quick and easy.

CAUTION

If you turn on Remote File Manipulation, you should use Access Control (as mentioned in "Configuring Netscape Server" and "Access Control") to restrict the users that are allowed to write to particular files or directories. Otherwise, anybody will be able to edit your files.

Document Preference

This option allows you to set the files that the Server looks for when a user enters an URL that ends in a directory name. By default, it will look for a file called index.html and then a file called home.html in a directory. To change or add to this list of files, under Index Filenames: enter the names (in order) of the files that you want the Enterprise Server to look for. (Use commas to separate file names.)

If one of the default files is not found, by default the Server will show a directory listing of the files available in the directory, along with graphics to depict the type of each link (directory, file, sound, image, and so on). To turn off graphics, set directory indexing to simple. To turn off directory listings all together, set directory indexing to None.

NOTE

Turning off directory indexing is often a good way to protect your files. If you have a directory containing only images, a user could easily back into this directory and get a full listing of all your graphics. While theoretically they have access to each of them through the separate Web pages that incorporate these images, there is no reason to make it easy for someone to grab all of your graphics.

In certain situations, you will want your home page to be something other than one of the default file names, or a file

other than one in the root directory. If so, click home page and enter the name of the file you want to set as your default home page.

URL Forwarding

As Websites develop, files are bound to move around the server, often onto another server. URL Forwarding allows you to set up automatic forwarding for particular files and directories which have been moved elsewhere.

Virtual Servers

A common need is to have one computer act as if it is hosting multiple web sites. Both Hardware Virtual Servers and Software Virtual Servers allow you to create the appearance that you are running multiple Servers. (See the section "Virtual Hosts" for more details.)

Document Footer

This option allows you to specify the text for a generic footer to add to the selected files. This is especially handy when you want to install navigation bars in the bottom of pages that may change in the future. (With the footers, you have to edit only one file to make changes on all the pages, rather than having to edit all the affected files.)

Version Control

Enabling Version Control prevents two users from editing a single file simultaneously. If Version Control is activated, users can "check-out" documents, preventing others from editing the file. (Other people can still see the document, they just cannot modify it.) Only once a person "checks-in" a document will it be available for others to edit again.

Index Documents

Up until now, searches on Web sites required the installation of third-party search software packages such as Glimpse and WAIS or CGI scripts to do simple searching. The Enterprise Server comes with a built-in, full-text search engine that can quickly be configured to offer your users a quick and easy overview of files on your Server. The search engine allows you to create "collections" of pages and directories, which can then be searched for key words.

Collections are easy to create, and once created can be automatically recreated at specified intervals, or can be edited manually at any time. To create a new searchable collection:

1. Under Collection Name:, enter the name of the collection.
2. Under Description:, enter a brief description of the collection.
3. Under directory to index:, enter the full path of the files to be indexed in this database.
4. Specify whether you want to include subdirectories.
5. Specify the file types to index.

Auto Catalog

Often, a search engine by itself does not provide users with the information they are looking for, nor does it supply them with other relevant information. To address this need, the Enterprise Server comes with a Cataloging system that catalogs files on the server based on modification date, title, author, and a user-defined classification. This allows users to quickly access all files created by a certain author or to view all the files that have been updated or created in the last few days.

Similar to the searchable collections, Catalogs are easy to create, and once created can be updated automatically at specified intervals or can be updated manually at any time.

Figure 5.8 : *Creating a new collection is as simple as naming it and entering the path of the files to be included in the database.*

Installing and Configuring LiveWire

LiveWire is an add-on for the Netscape Enterprise Server which allows administrators to create client-server applications that run over the Internet. Using JavaScript, a variety of programs can be written to create dynamic HTML pages that process user input and maintain data both in files and relational databases. Applications could include in-house on-line training sessions with Interactive tests, Intranet publishing, order tracking, or even something as simple as timesheets.

LiveWire comes in three parts, the Site Manager and the LiveWire compiler, the LiveWire server extension, and Netscape Navigator Gold. LiveWire Pro, which comes bundled with an Enterprise Server 2.0 purchase, also comes with a Structured Query Language (SQL) database and report generator.

Installing LiveWire

At this point, you should already have installed the Netscape Enterprise Server, as well as Netscape Navigator Gold.

1. Open the Services Control Panel and highlight your Netscape Enterprise Server. Click the Stop button to halt the Server.
2. Run the LiveWire executable file which you have downloaded.
3. When prompted to Select HTTP Servers to Configure, select the Servers for which you wish to configure LiveWire. (In most cases you will only be running one server.)
4. When prompted to Enter Information, enter the host name under which your server is operating.
5. When prompted to Enter Information for a second time, leave the option blank and click "next."
6. Go back to the Services Control Panel, highlight your Web server and click "start."

Figure 5.9 : *The LiveWire application manager is the key to creating Dynamic Web pages.*

Configuring Enterprise Server for LiveWire

1. Connect to your Netscape Administrative Server through Navigator Gold.
2. Within the Server configuration, click Programs.
3. Under Programs select LiveWire.
4. Toggle "Activate the LiveWire application environment" to yes and click OK.
5. Click "Save and Apply" changes to activate LiveWire.

Figure 5.10: *Once LiveWire is installed, it has to be activated from within the Enterprise 2.0 Configuration menu.*

Using LiveWire

Once LiveWire is installed, it can be used in one of several ways to help enhance a site. For the Web Site novice, the Site Manager is an easy way to get started building a Web Site. Using a few standard queries, Site Manager will create an entire website based on one of the many templates included with the software. These sites can then be customized to better suit the user.

The most exciting (though most difficult to master) feature of LiveWire is that it helps users develop client-server applications. These applications can serve any number of purposes, from simple mathematical calculations to complete database management.

Virtual Hosts

One of the new integrated features in the Enterprise Server is that it allows you to run multiple Web sites on the same machine. This might be helpful when one department wants to have a Server accounting.company.com, while another wants to have a Server legal.company.com. Rather than purchase two separate Web Servers (which would get expensive if you have many departments), it is possible to run multiple Servers on a single computer.

The Enterprise Server allows two ways of running additional Servers. The first option is to install a new Server and to run it on a different port. The other option is to run multiple Servers on the same port, 80. Because port 80 is the standard port, the second option is the preferable way of accomplishing this.

There are two ways to run multiple Servers under port 80. The first is to run hardware Virtual Servers; the second is to run software virtual servers.

Installing a Hardware Virtual Server

Before making any changes to the Server, you will need to load additional IP addresses that your NT server will respond to. Under NT, follow these steps:

1. Open the Network Control Panel and double-click TCP/IP protocol in the Installed Network Software box. This will bring up the TCP/IP Configuration box.
2. Click Advanced to bring up the Advanced Microsoft TCP/IP Configuration box.
Figure 5.11: NT's Advanced TCP/IP Configuration.
3. To add an IP address to your computer, enter the IP address and the corresponding Subnet Mask in the appropriate fields and click Add.
4. Click OK to return to the TCP/IP Configuration menu, then click OK again to return to the Network Settings menu.
5. To put your changes into effect, click OK in the Network Settings box and restart NT when prompted to do so.

NOTE

By using this method, you can add only five IP addresses to your NT server, even though the Enterprise server is capable of supporting up to 16 addresses. If you wish to add additional IP addresses, you will have to edit the Windows NT system registry directly. This is an option recommended only to experienced users, as mistakes in editing the registry can cause your system to fail. (Still have that rescue disk handy?) For more information on the subject, see <http://www.lancomp.com/MultipleDomains/>.

6. Under Content Mgmt, go to the Hardware Virtual Servers Setting.
7. In the IP Address field, insert the IP address you just added.
8. In the document root field, insert the document root for the new Server you are installing.
9. Click OK, and then click Save and Apply to make the changes and restart the Server. Now try to open your browser to the new Server you have just created.

Installing a Software Virtual Server

Software virtual servers behave slightly differently than hardware virtual servers in that they do not require a separate IP address. Rather, software virtual servers look at the domain name asked for on the incoming request and will serve up a file appropriately. To install a software virtual server, follow these steps:

1. Under Content Mgmt, go to the Software Virtual Server setting.
2. In the URL Host field, enter the host name to which you want the Server to reply.
3. In the Home Page field, enter the path to the home page to use for the virtual server. (Typing a full path will use the specific document; typing a partial path will be interpreted as being relative to the document root set in the

Primary Documents Directory setting.)

4. Click OK, and then click Save and Apply to make the changes and restart the Server. Now try to open your browser to the new Server you have just created.

NOTE

For software virtual servers to work, the host name specified in the URL Host field has to have a DNS entry pointing it to the IP address of the server.

Netscape FastTrack Server

The only drawback at this time of the Enterprise Server is the high costs associated with the server. For the business that does not need all of the features that are offered with the Enterprise Server, Netscape offers the FastTrack Server. Smaller, quicker, and easier to install, the FastTrack Server is ideal for businesses setting up their first Web Server.

FastTrack still allows users to update files remotely via Navigator Gold, supports SSL security, and comes bundled with LiveWire. Features that are lacking from the Enterprise Server include the integrated text search, revision control, the Cataloging system, SNMP support and the LiveWire Pro Database.

Troubleshooting

If nothing seems to want to work properly, don't worry. There are several options available for help when you are having trouble with your new Enterprise Server installation. NT itself comes with two management tools-the Event Viewer and the Performance Monitor-that can help to detect errors and optimize a system.

Detecting Problems with Event Viewer

Event Viewer, an application in the Administrative Tools program group, keeps a record of critical events and system errors that might give clues as to why certain operations might be failing. (For example, it would show that the Enterprise Server ran out of memory if you tried to run it on a system with only 16 MB of RAM). If you run into a situation where the server is not loading properly and the Server's Error Log does not offer an explanation, it is highly likely that the Event Viewer will have a detailed description of why the Server failed to work.

Monitoring with Performance Monitor

The Performance Monitor, also in the Administrative Tools program group, allows you to measure a handful of different performance elements. You can measure memory load, CPU load, as well as I/O information to determine where possible bottlenecks on the server might lie. If you installed SNMP when you configured your TCP/IP settings, you will also be able to monitor several TCP/IP elements.

Figure 5.12: *The Windows NT Event Viewer can help lend clues as to why a Server might be failing.*

Online Help

If you have tried everything, even having gone so far as to read the manuals and on-line help that come with the Server (which, by the way, are extremely helpful), don't give up yet. There are a number of online resources that can be extremely beneficial in solving problems.

Usenet Newsgroups are a great source of information on any problems you might be having. Following are some related groups:

- **comp.infosystems.www.servers.unix** is a great source of information on UNIX servers.

- **comp.infosystems.www.servers.ms-windows** is a great source for information on Windows 95 and Windows NT-based servers.
- **comp.os.ms-windows.*** offers several groups on various Windows-related issues.

Netscape Communications Corporation has several Server-related help areas available on its home site at <http://www.netscape.com>. Netscape NUGgies, or Netscape User Groups, are a group of dedicated, secure newsgroups run by Netscape. Discussion groups range from Browser discussion groups to the all-important (for you) Netscape Server User Group. NUGgies can be reached at http://www.netscape.com/commun/netscape_user_groups.html.

The Netscape Server Support page at <http://www.netscape.com/assist/support/server> has links to a wealth of server-related information, including a FAQ, an online installation guide, Technical Notes, Patches, and, if all else fails, a Help Request Form to the friendly techies at Netscape.

No matter what happens, don't give up! Web technology is still fairly new and is evolving every day. New techniques and services are constantly being added, with the result that actual documentation is often hard to find. Most importantly, don't be afraid to ask for help when you need it. There are plenty of friendly WebMasters out there that remember what it was like when they first started administering a Web site.

